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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,391	06/20/2003	Andreas Nickel	Bayer 10260-WCG	8238

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NORRIS, MCLAUGHLIN & MARCUS, P.A.
875 THIRD AVE
18TH FLOOR
NEW YORK, NY 10022

EXAMINER

NAGPAUL, JYOTI

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/600,391

Applicant(s)

NICKEL ET AL.

Examiner

Jyoti Nagpaul

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 17-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Amendment filed on March 17, 2006 has been acknowledged. Claims 1-26 are pending.

Response to Amendment

Rejection of Claims 1-2, 7, 11-16 and 26 as being anticipated by Bellhouse (US 6217764) has been maintained in light of applicant's arguments.

Rejection of Claims 3-6 and 8-9 as being unpatentable over Bellhouse (US 6217764) has been maintained in light of applicant's arguments.

Election/Restrictions

Applicant's election with traverse of Claims 1-16 and 26 in the reply filed on March 17, 2006 is acknowledged. The traversal is on the ground(s) that any search of the separation module itself is certain to include a search of the process of making it. This is not found persuasive because Groups I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the modules can be produced by co-extrusion of the capillaries.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 17-25 drawn to an invention nonelected with traverse in amendment filed on March 17, 2006. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-2,7,11-16 and 26** rejected under 35 U.S.C. 102(b) as being anticipated by Bellhouse (US 6217764).

Bellhouse teaches a membrane filter. The filter comprises at least one bundle of ceramic capillaries wherein a distance is established between capillaries by joining. Bellhouse teaches, “the porous blocks with helically grooved ducts within them could be made by a technique adapted from the well-known process for making ceramic filters with cylindrical capillaries according to the prior art.” (See Col.3, Lines 46-50) (See Col. 2, Lines 47-65) Bellhouse further teaches, “Filters which have a large membrane area packed into a small volume for larger applications are available commercially. One such filter provides a large number of parallel capillaries, in a highly porous block of support material such as a ceramic, with a much tighter porous layer at the wall of each capillary. The manifolding of the capillaries for feed fluid entry and exit is

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provided by the porous block. Filtrate passes through the capillary walls and then through the highly porous block. The filtrate is then collected in suitable channels at the outer surface of the porous block (FIG. 1). However, it is necessary to pump the feed flow through each capillary at velocities as high as 6 m/s in order to achieve reasonable mixing by turbulent flow and hence adequate filtration performance. Although this design is space-saving it requires very high flow rates, and hence pumping costs (both capital and running) are correspondingly high. Furthermore, damage to delicate components in the feed fluid, caused by turbulent flow is an additional disadvantage of this particular method." (See Col.1, Lines 27-45) Bellhouse further teaches, "In this process, and with reference to FIG. 7, a tubular metal container 24 has the required number of duct defining rods 26 fixed within it. The duct defining rods of the present invention have helical formations projecting therefrom and are screwed into the top and bottom end plates of the metal container. Particulate clay 28 in dry or slurry form or glass or other ceramic or polymeric material is introduced into the space between the duct defining rods 26. When filled, the container is heated in an oven to the temperature required to fire the clay or other porous material. When the fired block has cooled, the duct defining rods 26 are unscrewed from the porous block and the block is retracted from the metal container. The duct defining rods 26 and/or the metal container 24 may be slightly tapered to improve release." (See Col. 3, Lines 50-63) Bellhouse further teaches the capillaries (11) are combined at their endings by perforated plates/baffle plates (28) and further comprises a housing (24) which encloses the

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bundle, the housing having an inlet and/or outlet pipe (16) in fluid communication with the inside of the capillaries for a first material flow and/or outlet pipe (15) in fluid communication with the innerspace between the capillaries (11) for a second material flow the distance between the capillaries is kept constant by spacers/unlabeled. (See Figure 7) Bellhouse further teaches have, on the inside, a thin membrane having separation cavity. Bellhouse teaches, "Both of these examples work well with a polymeric, permeable, membrane tube of diameter 12.5 mm, but it is difficult to scale up these apparatuses to provide membrane." (See Col. 1, Lines 21-23) According to Figures 2-7, the capillaries (11) are arranged parallel to each other in a housing and the separation module comprises a feed space (12) and a permeation space (14). The housing (24) consists of stainless steel. (See Col. 3, Lines 51-52) Bellhouse further teaches a feed space and permeation space and wherein a vacuum/pump is applied to the permeate space (14). (See Figure 2)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 3-6 and 8-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellhouse (US 6217764).

Refer above for the teachings of Bellhouse.

Bellhouse fails to teach the external and internal diameter ranges and the distance between the capillaries.

It would have been obvious to one of the ordinary skill in the art to modify the system of Bellhouse such that the external and internal diameter ranges and the distance between the capillaries are as recites in claims 3-6 and 8-9 in order to an achieve an optimally efficient filter. It has been held in the court where the general conditions of a claim are disclosed in the prior, discovering the optimum

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or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 233)

Response to Arguments

Applicant's arguments filed March 17, 2006 have been fully considered but they are not persuasive. First, applicants argue that Bellhouse does not teaches or suggest bundle of ceramic capillaries having a distance from each other which is established by joining. Bellhouse does teach a bundle of ceramic capillaries having a distance from each other which is established by joining. Please refer in the rejection above. Second, applicants argue that Bellhouse does not teach "plates". However, Bellhouse does teach perforated plates which can be of particulate clay in dry or slurry form or glass or other ceramic or polymeric material which is equivalent to the teachings of applicants perforated plates. According to Figure 7, the plate (28) is perforated. Third, applicants argue that Bellhouse does not teach a "housing". Fourth, applicants argue that Bellhouse does not teach helical shaped capillaries, applicant is not claiming this structural limitation. Fifth, applicants argue that it would impossible to modify the system of Bellhouse such that the external and internal diameter ranges and the distance between the capillaries are as recites in claims 3-6 and 8-9 in order to an achieve an optimally efficient filter. Again, it has been held in the court where the general conditions of a claim are disclosed in the prior, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 233)

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Nagpaul whose telephone number is 571-272-1273. The examiner can normally be reached on Monday thru Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN


Jill Warden
Supervisory Patent Examiner
Technology Center 1700